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ABSTRACT

In 1973 an innovative, interdisciplinary global studies course was instituted at a secondary school in Ontario. Designed for advanced students at the grade 13 level, the course emphasized science, language arts, and mathematics issues in terms of the world's environmental and social problems. Rationale for the course included an awareness of the growing interdependence of all nations in the world, and the interrelatedness of man, the physical environment, and man-made environment. Course goals included helping students interpret current events and world problems, and instilling appreciation of the reciprocal relationships among global problems such as overpopulation, resource depletion, and political tension. Five broad topics formed the basis of the syllabus: numbers (population), migration and urbanization, man in conflict, global patterns of resource utilization, and the new world. Detailed outlines are presented for each of these topics, as well as a table showing time schedules, resources, and teaching approaches. A list of references identifies 116 books and 39 filmstrips, but the author stresses the importance of using additional core material available in school libraries and new resources which are continually being published. (AV)

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Global Education at Streetsville Secondary School

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ABOUT THE AUTHOR

Paul Thomas has been a geography department head in a secondary school for the past decade. He is the author of two approved textbooks and editor of *Monograph*, the professional development vehicle of the Ontario Association of Geographic and Environmental Education. A geographer by training, he is a sociologist by temperament and a competent photographer by avocation. His many travels to other parts of the world have impressed upon him the leading role of consciousness-raising in mobilizing human resources. He therefore hopes to see a geography of "inner space" (that is, values exploration) included in our education curricula of the future.

Global Education at Streetsville Secondary School

In 1973 Ontario's Ministry of Education approved an innovative experimental course called Man's Problem World *for implementation in the Senior Division at Streetsville Secondary School. Although developed as part of the geography program at the school, the course is really interdisciplinary in its details and value-probing in its thrust.*

BACKGROUND, IN THE CONTEXT OF THE SCHOOL

The course was conceived and designed when I was head of Streetsville Secondary School's geography department, with the encouragement and support of the school's principal, Fraser Manders.* The importance of such moral support cannot be overemphasized, for it also shows up in the school's tone, atmosphere, and philosophy in a way that is vital to the success of any experimental undertaking.

Streetsville S.S. is not a large school as schools go today. It has an enrolment of about 1000 students, representing both the country and the town in a way that makes for a healthy mix of attitudes and an appreciation of the nurturing role that the countryside has to play in the evolution of central places – a fact that often escapes students from more urbanized areas. The philosophy of the school is genuinely liberal without being permissive. Its emphasis lies squarely on *meaningful learning experiences*, both in and out of class, for which the paraphernalis of evaluation exists as servant and not as master.

GENESIS OF THE COURSE

Over my fifteen years in teaching it was brought home to me that a considerable time-lag seemed to exist between geography curricula and the contemporary world. This notion tended to be confirmed by my various travels, my experiences in writing two textbooks, and my service on several curriculum committees – particularly on a steering committee of the Canada Studies Foundation.

To cite just one example of the kind of discontinuity that exists, one geography text still in use offers case studies of Berbers and Pigmies when dealing with Africa. With the utmost respect for aboriginal minority groups, using them as case studies when dealing with a continent of 400 million people offers about as fair a picture of that region as focussing on the Inuit would be in dealing with Canada. Although such case studies may be useful, as far as they go, in illustrating themes of man/land adaptation, curricula have failed to move beyond such illustrations to the basic "gut" issues of developing regions. And to this day there are no official courses that allow for the discussion and analysis, in useful detail, of the great problem themes of Africa, Latin America, and Asia, regions whose future may affect the very survival of this planet.

Through contacts with Ontario geography teachers around the province that developed from my editorship of the *Monograph*, I discovered that many others held views similar to my own and that there is indeed a latent demand for *world problems* courses. My brainstorming with other individuals readily suggested topics that might be tackled in such courses – among them salient aspects of population geography; an overview of biospheric ecology; global patterns of resource utilization, especially food production; urbanization, the world's number one peacetime problem; man's role in changing the face of the earth; the geography of conflict, that is, political geography and geopacifics; Third World issues; world order, for example, the new international economic order and international organization; and future landscapes, wherein principles learned in the course might be applied to the writing of preferred scenarios.

*The course continues under the aegis of the present principal, Mr. Norman Gollert.

Putting these themes into effect, of course, posed additional challenges, not so much in gauging students' capacities and interests as in developing *experiential learning approaches* that would encourage self-conscious values formation by students without there being an externally conceived value trip laid on them.

A CLOSER LOOK AT THE PROBLEMS OF RATIONALE

In the conception of the world problems course at Streetsville S.S., it was felt that an alternative to a grade 13 program in Canadian geography was in order for those students who, for the lack of a subject-knowledge base ordinarily acquired from the grades 11 and 12 geography offerings, might be "turned off" by some of the technical intricacies of the regular fare.

The matter of curricular redundancy was also at issue. Having studied Canadian geography in grades 7 and 10 (of necessity in many instances), many students were rightly asking "Why do we have to study Canada again in grade 13?". Topping off a spiral curriculum by recapitulating material at a higher level of sophistication may make sense to some pedagogues, but the point is lost on many students.

Nor do students have any reason to be interested either in the general politics of curriculum development or, more specifically, in the offical emphasis on Canadian studies justly sanctioned to redress long-standing, gross deficiencies in national awareness. In the same sense that an individual must develop a resilient ego structure before he can relinquish the more puerile, albeit self-imposed, demands of that ego structure, people must obviously become a nation before they can become an "inter-nation." The micro to macro shift in this simple analogy illustrates the unevenness of this world's nations in their social, political, and economic "development." The juxtaposition of peoples adhering to different forms of socio-economic organization and cultural-ideological persuasions engenders stresses and strains that threaten the security of all men. Weighty questions of global resource coordination thereby come into play.

Given the foregoing, the rationale for world problems courses become self-evident. The continuing degradation by "homo sap" of the biosphere, our life-support system, will not be arrested as a result of the development of a national consciousness in a world of multi-national corporations. Surely a *concomitant* development of an active international consciousness (and conscience) is called for. Civics as a quaint unit of study, while useful perhaps for padding traditional social studies courses, must give way to responsible global citizenship. The latter is an imperative for our times. Canada is not the centre of the globe. Canada has, however, been favoured with opportunities for playing a leading role in international and Third World affairs. Geographically sandwiched on polar map projections between the U.S.A. and the Communist Bloc, Canada also becomes a natural mediator between the First and Second Worlds, as is evidenced by recent Canadian foreign policy.

An academically rigorous study of world problems would seem to make impossible demands on teenagers, who are just beginning to obtain a little first-hand experience of life. A really adequate examination of issues would require substantial documentation from the fields of geography, economics, political science, sociology, demography (with its exponential functions that frighten mathematophobes), biology, and psychology. As the course unfolded, teachers might become fairly erudite as a by-product of their strenuous lesson preparations; many unfortunate students, on the other hand, might become infected with the perennially recurrent condition known as "scrambled brains." Moreover, and more seriously, the economy of the psyche is such that overinvestment in the head could bankrupt the heart. Some students might well decide that, inasmuch as the problems of the world appear to be hopeless, the possibility of at the very least increasing their understanding of, and compassion for, other peoples must be abandoned as futile. An inevitable result would be the curtailment of interest in the avowed higher-level course objectives of appreciating the *reciprocal relationships* among the great problem patterns of the world – namely, among food, population, urbanization, political tension and war, economic underdevelopment, resource depletion, and the other man/land imbalances. In essence, an overemphasis on details could lead to the *world* becoming simplistically identified in the student's mind with an undigested maze of facts and placed "out there," when indeed we *are* the world, in the most fundamental sense imaginable.

Man is the measure of all things. That is to say, he exteriorizes his values in fashioning his institutions, but in so doing he too readily forgets that he does so, and comes to regard the status quo as sacrosanct. He forgets, for example, that resources are not resources until they are perceived as such. His concerns with measurement and quantity are, in essence, ideological exemplications of the natural science paradigm – to wit: man's destiny is to master nature; *ergo* men must count what they control (or would like to control) to demonstrate their control. Consequently, if information is a resource, then information in quantity approaches the *summum bonum*. The concern with quality of life or the development of a rich interior life through subjectivity then tends to be thrown out the window.

CENTRAL LINES OF ATTACK ENHANCE COHERENCE AND CLARITY

Meaning and measurement stand in opposition, for man is not *apart* from Nature but *a part* of it, despite what his over-emphasis on extroversion and conformity (i.e., outer-directedness) at the expense of the equilibrating inner-directedness leads him to believe.

A values approach, on the other hand, is consonant with greater inner-directedness and inner vision. Such an approach can provide teachers with the necessary orienting framework and the means for getting at root concerns. Myriad details can then be seen by all parties concerned as being constellated about a discrete number of themes and variations. For example, instead of their becoming mired in the merits and demerits of conflicting ideologies, with their endless charges and counter-charges, teachers can focus the issue by asking *in a phenomenological way* why it is that differences of ideology arise in the first place. When this is done, students quickly realize that problems in communications are antecedent to all others. For this reason there is a great need for identifying and examining barriers to communications. Experiential approaches can then be used to foster an appreciation of and tolerance for individual differences that stem from a host of factors, including neural organization, biochemical temperament, experience patterns, social programming, differentiation of psychic functions, and so forth.

The improprieties of using the term "developed" in referring to our country arise from our lack of awareness of our own ethnocentrism (which can easily become over-emphasized if we put too many eggs into the Canadian studies basket). After all, perhaps Canada is *under*developed if 37% of her adults, according to a recent study, are functionally illiterate. Indeed, critical thinking, a perennially espoused end-product of the educational process, then becomes seen as the self-criticism of one's own cherished notions, since any fool can, through projection, condemn the precious views of another.

Given this self-criticism, humanity's needs become more readily distinguishable from its wants. Needs are biologically determined and dependent upon the resource base. The manner of their satisfaction, however, is culturally determined, as are wants. Moreover, cultural-structural determinants can more easily be transformed to conform to bio-geo-structural determinants than vice versa. Thus, the solutions to all global problems can be expressed in a conceptual capsule centred on the bio-psychic make-up of humanity, which is, after all, united as a species if not culturally; Even so, the propensities for man's cultural forms are given by *a priori* principles of orderedness inherent in protoplasm. All the rest is simply psychodrama. Geography sets the stage for the drama, but the agency of man determines the direction of the plot.

These informing principles, if taken to heart, might in some small measure offer a rejoinder to the OECD's *Critique of Canadian Educational Policy*, in which the observation was made that

> . . . in vain, the school searches for a particular specified set of knowledge, attitudes, and values that it should impart. Today it has to strive to teach young people how to learn; it must prepare them for autonomy, liberty, flexibility, creativity difference and divergence – that is, for nothing that is already in place in society. Its terms of reference can no longer be society as it is given at present and even less can they be simply given by the local community in which the school is situated.

The Experimental Course in Outline

MEMORANDUM RE: Introduction of an Experimental and Innovative Course

FROM: Paul Thomas
Head, Geography Department
Streetsville Secondary School

Course Title: MAN'S PROBLEM WORLD

Date of Introduction: September 1974

Grade and Level of Study: Grade 13 advanced/enriched

Credit Value: 120 hours (1 full credit)

Prerequisite:

No formal subject requirement. Man's Problem World will, however, presuppose some knowledge of basic science and well-developed reading and analytical skills, coupled with a maturity of social awareness; hence, students will normally elect this course in their school-leaving year.

Course Rationale

The present submission is intended to supplement rather than supplant existing senior courses. Requiring no particular geography prerequisites, it is specifically intended for those students whose primary interests lie in the realms of science, language arts, or mathematics, but whose instincts dictate a need for unravelling some of the intricacies of the man-made world in which they live and have their being.

The integrating character of the geographer's discipline makes it admirably suitable for conveying an appreciation of world problems. Although global problems are not exclusively geographical in their nature, they all, without exception, hinge to some extent on man's use (or abuse) of his natural and of his man-made environment. The term *man-made environment* can be construed liberally here to include not only the modifications in landscape used by man to adorn the surface of this planet but his social systems as well, for other peoples and their folkways are as much aspects of environment as are glacial spillways and expressways. Unfortunately, too much geography teaching – even in these enlightened times – tends to be concerned with physical systems and their inter-action. Not enough consideration is given to the dynamic agency of Man, as he blithely re-enacts scripts that foul up the Great World Stage for subsequent generations of actors. Whether or not we consider man's political systems as geographic surrogates (in that such systems are simply ways of organizing human and natural resources), it is clear that the total extroverted phase of man's existence must be rooted in the soil of man/environment relationships. And it is the light of his intelligence that determines the character of the plants that bloom forth.

The question of what man ought to plant and harvest is a value question, that is, a *policy* question. Although policy is not geography, all environmental policy questions need to be informed by geographical understandings. Man needs to understand his world so that he can make the proper use of it. When this understanding is lacking or disregarded by decision-makers, the various problems touched on in the course Man's Problem World are the inexorable result. (See also the statement by Bowman on p. 16 of this syllabus.)

Course Objectives

Broad Course Aims:

a) To engender within the student an active awareness of, and intelligent interest in, the world of which he is a part, so that after leaving school he may apply the insights he has gained to interpret current events and the manifold problems existing in the world.

b) To help the student to visualize the great world stage, so as to fit him for active intelligent participation as a global citizen.

c) To foster an appreciation for the spatial dimension of global problems, so as to provide the student with a tangible framework for their analysis.

d) To foster an awareness of the interdependence of regions, nations, and peoples, tolerance for social and cultural differences, and sympathy for the problems of the Third World.

e) To instil an appreciation of the patterns and *reciprocal relationships* among the great problems of the globe – namely food shortages, overpopulation, urbanization, political tension and war, economic underdevelopment, resource depletion, man/land imbalances, eco-pornography, and the like.

Knowledge and Skill Objectives

a) To assist the student in apprehending the fundamental facts and concepts, through which he can grasp, in their dynamic interplay, the basic principles of demography, political geography, ecology, urbanism, and the various other matters listed in the syllabus.

b) To assist the student to pattern the random data that bombard his senses into knowledge that is actively useful for individual and team *problem-solving*.

c) In addition to the traditional steps in problem-solving (articulating problems, formulating hypotheses, testing hypotheses, etc.), to give the student an opportunity to engage in research design, statistical analysis, and policy formulation. These opportunities will occur in a variety of formats: laboratory exercises, student seminars, student debates, decision-making panels, in-depth essays, data-gathering, out-of-class ventures, and the like. The students should be given challenges that require them to (i) initiate and structure inquiry, (ii) amass primary data for correlation with ancillary data, (iii) collate, integrate, and interpret data, be it statistical, graphic, or verbal, (iv) produce original syntheses, (v) make policy (value) judgments based on a thorough examination of existing evidence, (vi) set their own objectives, (vii) cogently document positions of their own choosing, and (viii) communicate their discoveries, be they fact or opinion (with the difference understood), in a clearly systematic, written, oral, or graphic form.

Evaluation of Student Progress

The objectives listed under (c) above are sufficiently specific to permit a fair assessment of student progress. Moreover, they lend themselves to further atomization, so that the experienced teachers who will be looking after this program should have little difficulty in establishing an evaluation scheme.

More extensive evaluation criteria are provided in the Streetsville geography department's compendium of courses, which is on file in the school office. Suffice it to mention here, that at Streetsville S.S., formal examinations have been played down in favour of ongoing, day-to-day evaluation, on the grounds that knowledge, being a utility rather than a commodity, does not lend itself to questions of "How much?" It is expected that Man's Problem World will develop into a highly individualized program, with students setting their own program goals to a large extent (assisted by teacher counselling, of course). Responsibility for evaluation might be shared with students insofar as the means and instruments of evaluation would be negotiated before the fact.

Sponsoring Department/Teaching Personnel/Interdisciplinary Aspects

A knowledge of systems of man/environment interaction is pivotal to the matrix of understandings that the student is to develop. Although these understandings will initially be incubated in a geography seed-bed, they will rapidly spread into other disciplines, ultimately extending to the very boundaries of human thought. Hence, it would be neither possible nor desirable to specify beforehand all the possibilities for making Man's Problem World an interdisciplinary course. Suffice it to say that, in the course of their project work, students will be expected to utilize, on an ad hoc basis, the resources and expertise of the science, history, business, and English departments. In other words, the nature of the interdisciplinary activity will be determined by the nature of the task and the resources at hand, rather than by doctrinaire considerations.

Textbooks, References, and Related Resource Materials

A single textbook cannot be used for several reasons: No book has been or can yet be written for an

innovative experimental course that is along the lines of Man's Problem World.

No single book can do justice to the far-ranging, free-wheeling, ever-changing character of the course.

Since a primary course objective is to compel students to cull and sift diversified materials so as to make their own relevant syntheses, a single book would be undesirable.

A reference list is provided at the end of the course outline, not because of the recency and completeness of the material, but because it provides many starting points for the examination of fundamental and slowly changing concepts. Some of the titles are not currently stocked in secondary school libaries and will have to be purchased.

By way of orientation, a preliminary assignment for students taking Man's Problem World will be to spend a period or two in the library attaching Dewey decimal numbers to the items on the book list. This simple exercise will help them to familiarize themselves rapidly with the materials that are available in the school library or on the shelves of the geography department.

Among the books listed are several that are apt to be used and consulted frequently. Where such items are listed or *Circular 14*, their purchase as class sets should be considered. Such perennials include the Oxford regional and economic atlases, Stanford's *World Population*, *Man's Economic World* by Balins et al., and Krueger's *Urban Problems*.

No attempt is made here to list films, filmstrips, slides, film loops, and teaching kits that could be used. There is no shortage of relevant materials of this nature in the school or resource centre. In fact, it is in accord with sound learning practice to expect students to familiarize themselves with the nature and location of such ancillary materials on the theory that the hunt whets the appetite, whereas the silver platter satiates. Given the basics provided by the References, students can also be expected to update their understanding by referring to more transitory materials – particularly newspapers, magazines, and journals. These are not itemized here, inasmuch as a core of such material is available in every school library. Even so, many commonplace resources such as the *Globe and Mail* or the *Financial Post* have not really been exploited by teachers.

Needless to say, students will be expected to maintain clipping files of materials that relate to their particular interests. The geography department has over the years assembled suitable files which are presently awaiting fuller exploitation. For similar reasons, the Streetsville S.S. library has been persuaded to subscribe to a global clipping service for material on topics that fall within the bounds of Man's Problem World.

As for statistics, Canadian materials can readily be obtained from Statistics Canada that supplement such reference works as the *U.S.A. Statistical Abstract*, the *Statesman's Year Book*, the *U.N. Yearbook*, the *U.N. Demographic Annual*, and the *Britannica Yearbook*.

Syllabus: Man's Problem World

THE NUMBERS GAME

Conceptual Framework

1. *Terms*: demography, genetics, intercensal change, fertility, mortality, migration, reproductive change, death rate, age structure, population pyramids, demographic transition
2. *World population projections and their significance*
   - critique of demographic techniques
3. *Spatial characteristics of global population*
   - distribution, density
   - distribution of ecumene and non-ecumene
   - environmental factors influencing distribution and density
4. *Geopsychic differentiation of mankind*
   - global patterns of cultural and socio-economic characteristics
   - race
   - religion
   - literacy
   - stage of technological development
   - per capita income
5. *Factors affecting fertility, morbidity, and mortality*

The Population Explosion and Its Implications

1. *Defining the problem*
   - overpopulation, a relative term
   - credal perceptions
   - discongruity of expert perceptions
   - pessimistic vs. optimistic views of causes and consequences
2. *The ecological perspective*
   - the biosphere as a living spaceship
   - consequences of imbalance
   - the property concept
   - population pressure in relation to life quality and man's stages of technological development
   - biochemical feedback mechanisms
   - stress in human populations
   - concepts: Malthusian doctrine, credal perception, ecology, ecological ethic, "consumer goods," property instinct, territorial imperative, proxemics, politico-biotics, ethnocentrism, symbiosis, biosphere, life-support system, standing biomass, food chain, energy chain, energy system, ladder of life, hierarchy of life forms, producer, primary consumer, secondary consumer, trophic level, pyramid of numbers, biomass reduction
3. *Economic and political implications*
   - inventory of global food resources

- interregional variation in nutritional levels and health standards
- population and power factor – the myth and the reality
- disparity between natural population increase and food production – Malthusian disparity
- food production in relation to various institutional arrangements, such as tenure, size and organization of production units, culture fads, education, and inputs of capital, labor, and technology (law of diminishing returns)
- relation to other social hazards (poverty, hunger, disease, crime, war), with a case study of the Sicilian Syndrome, showing the underdevelopment of economic and human resources
- concepts: overnourishment, nutritional disease, Realpolitik, power politics, life-support system, underdevelopment

4. *Concept of optimum population*

Defusing the Biological Bomb

1. *Ways of restricting population increase*
   a) *Biological*
      - birth-control devices (mostly too expensive or too complex for underdeveloped regions)
      - Gandhi's admonition
      - infanticide
      - abortion
      - sterilization

      (conclusion: Manichaean thinking is both unaesthetic and ineffective)
   b) *Social*
      - sanctions for biological manipulation
      - raising marriage age
      - tax on children beyond specified number
      - desterilization upon proof of economic responsibility
      - penalties for irresponsibility
      - eugenics (will always be controversial)
      - reduction of cultural stimuli to hypereroticism
      - war, the ultimate social check
2. *Ways of increasing food production*
   a) *Increasing efficiency of existing agricultural land-use practices*
      (i) the role of land, labour, and capital inputs
      (ii) the role of social institutions
      - the problems of incentives under collectivist economies
      - styles of land tenure: case studies of the partitioning of inheritance (India, the Mediterranean, and Latin America); case studies of collectivist modes (Soviet *Kolkhoz*, Danish *co-op*, Israeli *Kibbutz*); alternative modes of financing farmers (subsidies, rental ceiling, guaranteed markets, floor prices, etc., etc.); the world tax concept; customs and attitudes
   b) *Devising and implementing new scientific technologies for food production*
      - broadening the spectrum of fertilizer inputs, e.g., recycling industrial/domestic sewage
      - modernization of implements; limits to mechanization
      - modern land-optimization practices
      - alternatives to agriculture; inventory of oceanic food resources; harnessing solar energy; recovering protein from algae production; genetic surgery; thermal manipulation; artificial illumination; laboratory synthesis of food
      - shortening energy chains and ecological implications thereof

MIGRATION AND URBANIZATION

Migration

1. *Motives for migration*
   - population pressure
   - nomadic style of life
   - urban drift
   - forced migration: war, famine, natural holocaust

- population transfer
- socio-economic advantage
- racism, repression
- religious proselytization, e.g., spread of Islam

2. *Types*
   - emigration, immigration
   - permanent, seasonal
   - interregional, intraregional
   - transoceanic, continental
   - journey to work

Urbanization

1. *Historical background*
   - origins: Fertile Crescent, Mohenjo Daro, Tiahuanaco
   - diffusion of Roman civilization
   - 1000 A.D.-1400 A.D., spread of mediaeval towns and villages
   - 1500-1800 A.D., period of relative stagnation
   - 1850-1900, the urban renascence and the industrial city
   - post-1900 A.D., the urban explosion
2. *Factors in emergence and diffusion of industrial cities*
   - acceleration in agricultural productivity
   - industrial technology (the steam engine, etc.)
   - transportation technology; the application of internal combustion engine permits: aerial expansion or suburbanization of the core city, economic interdependence between cities, drift of footloose industries and corresponding recrystallization of population distribution
   - military and communications technology enhances extensions of nodal areas, increased complexity of socio-economic and political integration

   (Resulting sprawl, a counter-integrative tendency)
3. *Demographic analysis of selected urban cases; use of census tract data to analyse*
   - sex-age profiles of net migration ratios
   - regional sex-age, economic-ethnic differentials
   - evaluation of labour market with view to satisfying need for immigrants
4. *Psycho-social aspects*
   - reception zones and dispersion zones for immigrants
   - problems of social integration
   - cultural interchanges
5. *Ecological aspects*
   - nature of a community
   - intercommunity relations
   - reorganization of land uses
   - reordering of people flows
   - limits of expansion
6. *Themes for ideographic documentation*
   - urbanization and industrialization
   - urbanization as a force in developing human resources
   - origin and evolution of cities – the evidence of archaeology
   - global variations in urban form, land-use, functions, circulation and metabolism, urban-rural ratios, and rates of urbanization: case studies of Ciudad Guyana; the ecological balance of the Scandinavian city, urban transport as the key to the spatial organization of urban activities, with special reference to Toronto and Tokyo

Problems of the Contemporary Urban Scene

1. *Metabolic disorders*
   - vital services: soil, water, and air pollution
   - "obesity" (sprawl)
   - transportation

2. *Social pathology*
   - stress, alienation, poverty, crime
   - problems of minorities and low-income groups; comparison of North American and Third World slums, e.g., the barrios and favelas of Latin America

3. *Rehabilitation of urban life*
   - alternative modes of transportation
   - restoration of pedestrian scale and sense of community
   - urban redevelopment
   - provision of green spaces and recreational amenities
   - mitigation of stress and protection of privacy without loss of neighbourhood through improved design and aesthetics

MAN IN CONFLICT

In an autocracy a very small political group may take the most fateful decisions respecting peace and war. In a democracy the citizen participates in this grave task. It is therefore the paramount duty of all citizens who wish to see our civilization preserved and advanced, to know the peoples about them, their problems, their resources, their possibilities, and their spirit, – in short, the political and geographic as well as the historic and economic bases of their life. Yet such information concerning the different peoples and countries of the world is often hard to come by, and its interpretation usually requires an acquaintance with the sources of knowledge that few people possess.

– Isaiah Bowman, 1924

1. *Conceptual framework*
   The territorial imperative, the "property instinct," the politicobiotics of Ratzel, theory of open-ended hierarchies, the staatsidee, the region as administrative unit, power vacuum, irredentism, human ecology, pivotal area, zones of friction, ecumene, frontier, stages of political integration, heartland (and rimland, political core, buffer zone)

2. *Political geography as earth-state interaction*
   - power factor, a function of development of human resources, territory and its resources, organization as evidenced by circulation
   - the concepts of boundaries and effective occupance
   - the role of size, space, and lines of communication

3. *Taxonomy of boundaries*
   a) *Physical*
      - mountains, hills
      - rivers, canals, lakes
      - deserts, forest, swamp.

   b) *Geometrical*
   c) *Historical*
      - antecedent
      - subsequent
      - superimposed
      - relict

   d) *Status*
      - de jure
      - de facto

   e) *Functional*
      - ethnic
      - economic
      - ideological
      - social divide
      - stabilizer
      - undefined (Rub Al Khali)

4. *Pathology of boundaries*
   a) segregators or irritants (Boggs's irritability index)

b) rationale of expansionism
- national self-interest
- claims: strategic (quest for "security"); economic; ethnic, *Volksgeist*; corridors; right of transit

c) rationale of containment
- national self-interest
- doctrine of balance
- neutral and demilitarized areas
- buffer zones
- international law

5. *Perennial "geopolitical" themes*
- the right of a state to "space"
- drive to the sea
- Drang nach *Osten*
- seapower and freedom of the seas (Mahan); limits of territorial seas
- concept of exploitable world
- psychology of the frontier
- "evolution" of states
- location as a strategic resource

6. *The bases of "geopacifics"*
- peoples, ideas, and group motivations
- permeability of boundaries
- alternatives to the military-industrial complex
- regional blocs and other supranational organizations
- communality of resource perceptions

7. *Interdisciplinary readings*
- Albert Einstein and Sigmund Frued: *Why War?*
- Plato: *The Origin of War*
- Joseph Stalin: *Capitalist Encirclement and Social Encirclement*
- Eric Hoffer: *The True Believer*
- M. K. Gandhi: *The Principle of Non-Violence*
- Walter Lippman: *The Rivalry of Nations*
- Walter Berns: *The Case Against World Government*

GLOBAL PATTERNS OF RESOURCE UTILIZATION

1. *Review stages of economic and technological development* (see next section, item 4a)

2. *Global Resource Inventory*

a) *Food resources* (see also first section, item 3 under "The Population Explosion and Its Implications")
- crop staples, fish, fowl
- meat
- global patterns of nutrition
- variations in intensity of land use, mechanization, output, etc.

b) *Industrial resources*

i) Forests
- geographic distribution of forests
- forest products, potential forest resources, outlook

ii) Minerals
- global pattern of strategic mineral reserves

iii) Energy
- world reserves of water power and of coal, petroleum, and other mineral fuels
- energy-use efficiency, outlook
- the economics of energy and power

3. *Resource flows*
- macro-patterns of transport, trade, and commerce; trade dependency on raw materials

4. *Interregional and international comparisons in indices of economic development*
- urban/rural population distribution, literacy, per capita income, gross national product, power factor,

post-primary school enrolment, newspaper circulation, density of transport lines, vehicle ownership, commercial and domestic energy consumption, steel consumption
- industrial distribution of global labor force, prevailing conditions of employment, causes and costs of labour waste

(Reference: *United Nations Statistical Yearbook*)

5. *Geonomic patterns generalized*
   - barter economy versus money economy
   - analysis of correlation matrices

   (Reference: Norton Ginsberg (ed.), *Essays on Geography and Economic Development*, Department of Geography Research Paper No. 62. (University of Chicago Press, 1960.)

THE NEW WORLD

Man's Role in Changing the Face of the Earth

1. *Background concepts*
   - resources as cultural perceptions
   - inventions as adaptive responses to the environment
   - cultural differences produce differential interactions of technology, social structure, and habitat with natural resources
   - evolution of human wants and social objectives: vegetable civilization; mechanical civilization; electronic civilization
2. *Historical overview*
   - fire as an ecological determinant
   - hydraulic civilization; comparative studies (the Incas, the Chinese); and demographic consequences
   - forests as a perceptual obstacle
   - spreading of dry belts through the agency of man, e.g., Sahara desert, Gobi desert
   - impact of primitive economies on natural ecosystems
   - changes in landscape by forces independent of man: ice, sea, lava, climate, flood, earthquake
3. *Impact of man on*
   - coastlines
   - ground and surface water
   - local micro-climates
   - biotic communities: tundra, grassland, selva
   - the harvest of the seas
4. *Technology and economic development*
   a) *Stages of technological development*
      - adaptation, domestication, diversification, mechanization, and automation
      - the wheel
      - agricultural revolution
      - application of metals: bronze, iron
      - industrial revolution
      - chemical revolution
      - age of electricity and telecommunications
      - transportation revolution

   b) *Changing uses of energy*
      - energy and labour efficiency
      - superiority of inanimate energy over animate energy
      - impact of energy types on capital requirements, choice of materials, mobility, speed and scale of production

The Third World

- meaning of underdevelopment
- incoherent homogeneity and coherent heterogeneity as measures of structural differentiation along a socio-economic continuum
- measures of regional economic integration
- patterns of regional and international integration

- the role of education in economic development
- politics and modernization
- the psychology of cultural awareness
- economic forecasting: predicting manpower requirements; case studies of socio-economic progress in selected regions (Guyana city, Northeast Brazil, India, Argentina, Vietnam, Nigeria)

Environmental Threats to Man

1. *The biosphere*
   - its finite character; limits of the earth
   - ultimate costs of technology; limits to consumption of raw materials and energy
   - self-destruction of modern technology; the unstable equilibrium between man and nature
   - historical roots of the ecological crisis
2. *The technological depradations of machine civilization*
   a) *Atmosphere and climate*
      - meteorology of air pollution; the photochemical effect
      - taxonomy of pollutants and their diffusion
      - evaluation of planetary air supply
      - air pollution and climatic change

   b) *Water*
      - oil pollution of the oceans
      - thermal pollution
      - hydrological consequences of urban land uses
      - ecological implications of reversing river flows, e.g., James Bay hydro proposal, the U.S.S.R. experience
      - Lake Erie, a study in eutrophication

   c) *Other man-created hazards that jeopardize ecosystems*
      - solid wastes
      - acoustic torture
      - mutagenic potential of radiation and chemicals
      - geological, e.g., impact of mining on environment
      - defoliating vegetation by air pollution and war, e.g., Vietnam
      - impact of highways
      - pesticides
      - agricultural practices and biogeochemical cycles
      - aesthetics
      - population pollution; proxemics
      - thermonuclear war

   d) *Urbanization as the most serious peacetime threat to life quality*
   e) *Impact of technology on aesthetic, ethical, and legal values summarized*
   f) *Towards an Ecological Accounting System*
      - costs and benefits to man not merely economic, but biological, psychological, and social as well

Future Landscapes

1. *A scenario for the 21st century*
   - probable technical innovations in structural materials, fabrics, communications, transport, remote-sensing devices, genetic surgery of plants and animals, housing design, energy sources, machine intelligence, education, control of catastrophe, social structure, space research, cryogenics, automation of secondary and tertiary activity, systems approaches to environmental preservation, etc.
2. *The impact of the foregoing on "life-style," quality of life, the man/land interface and man/man interaction*
3. *The urban environment of tomorrow*
4. *Towards ecumenopolis: an organic system of world government, pros and cons*

SUMMARY OF COURSE TIMING, REFERENCES, AND ACTIVITIES

TOPICS	TIMING[1]	REFERENCES/RESOURCES[2]	METHODOLOGY/STUDENT ACTIVITIES
The Numbers Game			
Conceptual Framework	10 serial periods	22, 26, 95, 115, 91, 113; fs310.	Exercises in statistical graphing, mapping, correlating, interpreting. Induction of general demographic principles.
The Population Explosion			
1.	2 periods	5(ch. 25), 2.	Book reports, student presentations of basic ideas, short lectures by biology teachers.
2.	5 periods	5, 2, 3, 16, 46, 21, 29, 20; fs462, fs463.	
3.	10 periods of parallel individualization[3]	113, 116, 37, 51, 85, 90, 63, 106, 11, 92; Sicily slides, 32	Seminar teams, policy simulations, game methods, e.g., *The World Game Scenario*
4.			Discussion and presentation of documented position.
Defusing the Biological Bomb			
1.	12 periods, mostly in parallel	5(ch. 26), 112, 103.	Simulated decision-making and policy debates. Use of visiting speakers to deal with various aspects of problem.
2.		5(ch. 27), 93, 90, 111, 62, 42; fs314, fs464.	Methods of sociological and geographical analysis. Case studies illustrated by slides, especially for Denmark, the Mediterranean, and Latin America.
	39		
Migration and Urbanization			
Migration	4 periods	111, 107; fs261.	Short lectures by students and teacher; laboratory-type analytical exercises.
Urbanization	12 periods, mostly parallel	12, 24, 66, fs549.	Individualized assignments according to student interests.
Problems of the Contemporary Urban Scene	6 parallel periods	47, 20, 12, 50, 57, 68; 5s532, fs549.	Urban ecology field trip, analysis of the local industrial, urban, and social milieu. Visits to planning offices, individualized student field work. Films – *City Limits*, *Cumbernauld*, *One Way to Better Cities*.
	22		
Man in Conflict	15 serial periods	10, 107, 79, 72, 78, 2.	Content for this topic is highly technical and will require considerable student reading and teacher input.
	10 parallel periods	See also readings indicated on p. 11 of syllabus; fs318, fs244, fs312, fs360, fs452, fs531.	Topic lends itself to precis writing at first, followed up by *laboratory-type exercises* using atlas, large-scale maps, and statistics, together with historical and political data. This can be topped off with policy simulations on current international issues.
	25		

Global Patterns of Resource Utilization			
1.	3 periods	5(ch. 2).	Laboratory-style exercises in the analysis of cartographic and statistical data, coupled with interpretation, extrapolation, and prognostication.
2.	6 periods	116, 30, 77, 42, 86; fs*Energy*.	
3.	5 periods in parallel	59; *U.N. Statistical Yearbook*, Ginsberg material.	Student research teams for collecting, collating, and interpreting various types of data.
4.	10 periods	111	
5.	6 periods	104	
	30		
The New World			
Man's Role in Changing the Face of the Earth	12 periods mostly in parallel	9, 15, 27, 30, 100, 67; fs557, fs*Energy*, fs*Soil*.	Extensive student research, reading, precis and report writing, seminar presentation, policy simulations
The Third World	8 serial periods 10 in parallel	33, 51, 73, 94, 99, 104, 112, 23, 34, 74; fs166, fs110, fs124, fs198, fs228, fs244, fs[illegible], fs312 fs315, fs452, fs*Scarcity, a Basic Economic Problem.*	Technical concepts presented by short lectures, with students applying principles to examples of their own choosing. Seminar presentation of case studies.
Environmental Threats to Man	5 serial periods 15 parallel	6, 18, 19, 27, 36, 40, 43, 81, 82, 87, 102, 108, 52, 70; fs320, fs469, fs470, fs471, fs472, fs473, fs474, fs475, fs476, fs477, fs564.	Field work – observation, data collecting, and interviewing members of public, industrial officials, and political representatives. Individualized seminar presentations and policy debates.
Future Landscapes	14 periods mostly parallel	41, 65, 110, 114, 54; fs203, fs225.	Scenario writing, stochastic forecasting, brainstorming, simulations, gaming. Delphic technique, think-tanks, team problem-solving. Individualized predictive analysis.
	64		
Total	180 periods (120 hours)		

[1]In 40-minute periods, total time is 120 credit hours of 180 periods.

[2]Numbers refer to items listed in References (fs means filmstrip).

[3]I.e., several topics handled concurrently.

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FILMSTRIPS

(*Note*: The filmstrips listed below are not to be used holus bolus. Selected frames may be used by students to elucidate a topic, but not as a substitute for student work in the area.)

fs106 The Arab World
fs108 Russia, 50 Years of Revolution
fs110 Focus on Africa
fs124 Latin America
fs198 Africa – Continent in Ferment
fs203 The Next 20 Years
fs225 The United Nations Organization
fs228 Africa in Ferment
fs244 India and Pakistan
fs245 Cuba, 10 Years of Castro
fs310 World Population Patterns – Outlook and Implications
fs312 Political Ferment in Latin America
fs313 Toward European Economic Unity
fs314 Scarcity a Basic Economic Problem
fs315 The New Africa
fs318 Nationalism is a Force in Asia
fs320 Air Pollution
fs360 Russia's Restive Satellites
fs392 Squandered Resources
fs452 Emerging Indonesia
fs461 A Nation of Immigrants
fs462 The People Problem Part I
fs463 The People Problem Part II
fs464 Population and Food
fs469 The Great Lakes Part I History and Ecology
fs470 The Great Lakes Part II Causes of Pollution
fs471 The Great Lakes Part III Results of Pollution
fs472 Environmental Pollution Part 1 Nature of the Crisis
fs473 Environmental Pollution Part 2 Atmospheric Pollution
fs474 Environmental Pollution Part 3 Land Pollution
fs475 Environmental Pollution Part 4 Fresh Water Pollution
fs476 Environmental Pollution Part 5 Marine Pollution
fs477 Environmental Pollution Part 6 Pollution Control
fs530 Latin America and the U.S.A.
fs531 The Two Germanys
fs532 The Embattled Metropolis
fs549 City in Transition
fs557 The Green Revolution
fs564 The Last Frontier – Oceans

Streetsville Geography Department
Canopy of Air, The
Energy
Political Ferment in Latin America
Scarcity, A Basic Economic Problem
Soil, Part I and Part II

Films and Videotapes
A list is not given here because:
1. Unlike reference books and filmstrips, access to films and videotapes cannot be guaranteed at the time and place desired.
2. New titles are perpetually being drawn to this department's attention.
   Every effort will be made to show topically relevant films at the most advantageous points in the syllabus.

POSTSCRIPT

The foregoing reference list needs constant revision. Readers familiar with materials not included in this list are invited to forward their titles, with details if possible, to me at the address given below. I am also willing to "field test" and evaluate new materials that have been developed by any interested parties or agencies. Constructive criticisms or other comments are also very welcome.

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